Nueces Estuary Advisory Council (NEAC) Meeting
Monday, June 22, 2015 at 1:30 p.m.
Corpus Christi Water Utilities
2726 Holly Road, Corpus Christi, TX 78412

Minutes

Members Present: Chris Loft, Chair; Ray Allen; Rae Mooney (alt. for Ray Allen); Jace Tunnell (alt. for Ed Buskey); Ruben Solis; Paul Carangelo; Rocky Freund; Con Mims; Brent Clayton; Paul Orser; Wes Tunnell; James Tolan; Brian Williams (alt. for Don Roach)

Call to Order
Chairman Chris Loft called the meeting to order.

Approval of Meeting Minutes
Members unanimously approved the February 23, 2015 meeting minutes.

Updates on Funded Workplan Projects
Chairman Loft informed members that each contractor would provide a short update over their funded workplan project.

a) Nueces Monthly Inflow Evaluation – Cory Shockley, HDR Inc.

Mr. Shockley provided an update on a project aimed at evaluating freshwater inflows to Nueces Bay and the Choke Canyon Reservoir and Lake Corpus Christi (CCR/LCC) system as well as the potential impacts a shift in the inflow regime might have on varying safe yield demands. He indicated that the modeled results supported a shift with five months annually showing a significantly drier trend, though no significant trend was observed in the remaining months. In addition, no months showed a significant wetter trend. He stated that a shift to a drier trend does not suggest lowering inflow targets because those targets are not a significant driver for safe yield but rather inflows to the system. Further, he stated that increases in safe yield generally result in reduction to mean annual freshwater inflow. In addition, an analysis of varying safe yield demands on the system revealed that while lower demand equals higher lake levels and more opportunities for larger pass-throughs, a lower demand scenario does not result in significantly higher attainment frequencies of inflows to the bay during dry times. Mr. Shockley expressed, however, that some benefits might be gained by evaluating adaptive management opportunities with the Agreed Order such as dynamic targets versus static, zone shifts, and seasons versus monthly targets. In addition, including hydrological data such as the recent drought would allow for more extensive trend analyses to be performed. The draft report is due to TWDB June 30, 2015 with the final report due August 2015.

b) Nueces Nutrient Changes Over Time – Paula Lemonds, HDR Inc.

Ms. Lemonds updated members on the funded project to develop pre- and post- nutrient budgets for the Nueces watershed. The aim of the project consists of partitioning out natural nutrient loads versus anthropogenic loadings and developing annual loads for pre-development and present conditions. She indicated that the study had completed analysis on land uses within the Nueces watershed, evaluated the Mission-Aransas Watershed as a surrogate for comparison to the Nueces, and determined the effects of Choke Canyon Reservoir (CCR) construction on nutrient loads. In addition, calculation of annual loads during dry, average, and wet years pre-and post-reservoir construction had also been performed. Ms. Lemonds informed members that results of the land use analysis indicated that about 4% increase in urban area was observed in the Nueces watershed from 1992 through 2011, but that the number of cultivated acres has remained relatively the same. The study team also found that the Mission-Aransas watershed is more impacted from nutrient runoff than the Nueces, which made it inappropriate to use as a baseline for comparisons to the Nueces. Next Ms. Lemonds demonstrated the impacts of waste water treatment plants (WWTP) in the Nueces as a factor of flow. Her results suggest that areas of intermittent streamflow might be more heavily impacted by nutrients due to WWTP discharges than areas with perennial streamflow and that these impacts typically attenuate downstream from WWTP outfalls. In addition, evaluation of nutrient levels pre-1986 and post-1986 (construction of the CCR system) revealed that total nitrogen declined between this time period and that while total phosphate and organic phosphates increased in the Frio River and San Miguel Creek watersheds post-construction, increases downstream of CCR have not been observed. Lastly, she indicated that potential future work might evaluate partitioning the water quality datasets temporally, seasonally, and/or with rising or declining parts of the hydrograph as well as identify non-point source components of nutrient loads. Members inquired as to the poor fit of the observed data versus the modeled nutrient data and when the draft report would be submitted. Mrs. Lemonds indicated that the fit was a factor of the model averaging samples across a specific flow value and that a draft report was due to TWDB June 30, 2015 with the final report due August 31, 2015.

c) Nueces Delta Hydrodynamic Model – Dr. Ben Hodges, Center for Research in Water Resources, University of Texas at Austin

Dr. Hodges provided an update to members concerning the development of a hydrodynamic model for Nueces Delta and Bay. He indicated the study team had selected a subset of TWDB's data points in the Nueces and calibrated the initial salinity for the model. He then provided summaries to members on modeled scenarios (Nueces 1-14), describing the fit of the model to observed values of surface elevations and salinities under typical pumping scenarios. He attributed the poor fit of some of the modeled scenarios to not incorporating evaporation into the model and the shallow water depth in areas such as tidal flats. NEAC members inquired as to why evaporation was not included in the model. Dr. Hodges indicated that including evaporation in the model is very difficult because of the highly non-linear relationships between factors such as temperature, solar

radiation, benthic sediments, absorption, etc. that affect evaporation rates. In addition, members were informed that the draft report would be submitted July 31, 2015 with the final due September 2015.

d) Nueces Delta Landform Modification - James Dodson, Naismith Engineering, Dr. Ken Dunton, University Texas Marine Science Institute (UTMSI), and Dr. Ben Hodges, Center for Research in Water Resources, University of Texas at Austin

Mr. Dodson provided an update to members concerning the progress of a study exploring landform modifications to Nueces Bay and Delta aimed at maximizing the benefits of available freshwater inflows. He provided a background on existing projects of interest in the Nueces Delta and Bay as well as outlined the original landform modification scenarious evaluated by the study team. He informed members that three projects were selected for the final modeling efforts which include simulation of diversions from the Middle Rincon Bayou to South Lake, North Lake to South Lake system, and Odem WWTP discharge. Dr. Dunton provided an overview of the potential impacts hydrologic modifications might have on porewater salinity and biology in the delta which resulted in the following recommended modeling criteria: a salinity less than 25 parts per thousand (ppt); a water depth greater than or equal to 1 cm; and at a temporal scale greater than 6.2 hours to capture tidal variation within the system. Mr. Dodson explained the model's assumptions and parameters such as one pump, running for 30 days, with target pumping volumes of 1200 (drought period monthly target under the Agreed Order) and 3000 (max delivery capacity of 1 pump/30 days) acre-feet. Dr. Hodges then presented the modeled results in terms of marsh acres lost or gained for each scenario. The conclusions of the study support that two new channels diverting water from Rincon Bayou could potentially inundate and lower salinities in the areas south of the main channel resulting in a net gain of marsh acres however, in some cases a net gain of marsh acres came at the cost of losing a portion of the current marsh. In addition, some models evaluated resulted in a net loss of marsh acres. The study team recommends that further modeling should be undertaken to evaluate additional scenarios for pumping freshwater water through the system. Members inquired as to if the inclusion of additional pumps might impact the results of the model. Mr. Dodson stated that more than one pump scenarios might change the amount of marsh acres lost or gained. Lastly, the study team indicated that while the Odem WWTP discharge is most likely beneficial to the local system, the amount of water discharged is too small to provide extensive large scale benefits. The draft report is due to TWDB June 30, 2015 with the final report due August 2015.

Review of Workplan Projects and SB3 Funding

Dr. Solis, TWDB, informed members that review of the draft study reports would begin soon. He indicated that the focus of the reviews should be limited to within the context of the original scope of work (SOW) for the project, and once the reports are submitted they will be distributed to reviewers along with a guidance document. Reviewers will have approximately a 2 week window to complete their review. In addition to review of the currently funded workplan projects, Dr. Solis indicated that funding through the

TWDB's budget had been approved for the continuation of environmental flow studies in the next biennium. He indicated that $2 million would be available for the next round of funding, that no funds had been earmarked for specific basins, and that the board would request feedback from all seven of the SB3 bay and basin groups (Nueces, Trinity-San Jacinto, Colorado-Lavaca, Guadalupe-San Antonio, Sabine, Rio Grande, and Brazos) concerning the need for funding moving forward. He estimates that the funding will be in place at the earliest in beginning of 2016. He encouraged the BBASC groups to start evaluating their recently completed studies, prioritizing workplan projects, and developing new SOW for requesting proposals.

Nueces BBASC members present at the meeting discussed formation of a sub-committee to review the draft reports, prioritize work plan projects and develop SOWs for the next round of funding. The following Nueces BBASC members volunteered to serve on the committee: Ray Allen (Chair), Jace Tunnell, Brent Clayton, Paul Carangelo, Con Mims, and Jim Tolan). The subcommittee will provide their recommendations to the NEAC in September 2015. Members inquired as to whether the Nueces BBASC's Workplan for Adaptive Management would need to be amended if the subcommittee recommended studies not included in the currently submitted workplan. Dr. Solis indicated that it would most likely makes the group's request for funding stronger, if their workplan was amended to include any new studies.

City of Corpus Christi Water Supply Update
Bent Clayton, City of Corpus Christi, provided members with an overview of the current state of Corpus Christi's water supply in Choke Canyon Reservoir and Lake Corpus Christi. He indicated that while the recent rains had increased the levels in the lakes the City would stay in drought stage 2 with once per week watering. The aim of the City in the long run is to incorporate once per week watering into their water conservation plan.

Other Items
Members inquired as to the future status of the BBASC and BBEST groups, member terms, and whether the EFAG would be meeting to approve the submitted workplan. Both Ruben Solis and Chris Loft indicated that no information was currently available.

Next Meeting
The next meeting of the NEAC is tentatively scheduled for Monday, September 14, 2015 at 1:30 p.m. at the City of Corpus Christi Water Utilities Building – Choke Canyon Room.

Public Comment
No public comments were made at this time.

Meeting Adjourned